

From the INTERNATIONAL BUREAU

**PCT**

NOTIFICATION CONCERNING  
 TRANSMITTAL OF COPY OF INTERNATIONAL  
 PRELIMINARY REPORT ON PATENTABILITY  
 (CHAPTER I OF THE PATENT COOPERATION  
 TREATY)  
 (PCT Rule 44bis(1)(e))

**R E C E I V E D**

To:

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Date of mailing (day/month/year)  
 25 June 2009 (25.06.2009)

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Applicant's or agent's file reference  
 ART030PCT

GROSSMAN, TUCKER,  
 PERREAU & PFLEGER, PLLC

**IMPORTANT NOTICE**

International application No.  
 PCT/US2007/025284

International filing date (day/month/year)  
 11 December 2007 (11.12.2007)

Priority date (day/month/year)  
 11 December 2006 (11.12.2006)

Applicant

ARTHROSURFACE INCORPORATED et al

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

The International Bureau of WIPO  
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# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference ART030PCT	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. PCT/US2007/025284	International filing date ( <i>day/month/year</i> ) 11 December 2007 (11.12.2007)	Priority date ( <i>day/month/year</i> ) 11 December 2006 (11.12.2006)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant ARTHROSURFACE INCORPORATED			

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																								
<p>3. This report contains indications relating to the following items:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;"><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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	Date of issuance of this report 16 June 2009 (16.06.2009)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No. +41 22 338 82 70	Authorized officer  Nora Lindner  e-mail: pt11.pct@wipo.int

## PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

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PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) 11 JUN 2008

Applicant's or agent's file reference  
ART030PCT

## FOR FURTHER ACTION

See paragraph 2 below

International application No. PCT/US 07/25284	International filing date (day/month/year) 11 December 2007 (11.12.2007)	Priority date (day/month/year) 11 December 2006 (11.12.2006)
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International Patent Classification (IPC) or both national classification and IPC  
IPC(8) - A61B 17/00 (2008.04)  
USPC - 606/79

Applicant ARTHROSURFACE INCORPORATED

## 1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

## 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Date of completion of this opinion 28 May 2008 (28.05.2008)	Authorized officer: Lee W. Young  PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774
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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US 07/25284

**Box No. I Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of:
  - the international application in the language in which it was filed.
  - a translation of the international application into \_\_\_\_\_ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2.  This opinion has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established on the basis of:
  - a. type of material
    - a sequence listing
    - table(s) related to the sequence listing
  - b. format of material
    - on paper
    - in electronic form
  - c. time of filing/furnishing
    - contained in the international application as filed
    - filed together with the international application in electronic form
    - furnished subsequently to this Authority for the purposes of search
4.  In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US 07/25284

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1-20	YES
	Claims	None	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-20	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims	None	NO

**2. Citations and explanations:**

Claims 1-16, 18 and 20 lack inventive step under PCT Article 33(3) as being obvious over US 6,610,067 B2 to Tallarida et al. (hereinafter 'Tallarida') in view of US 6,884,246 B1 to Sonnabend et al. (hereinafter 'Sonnabend').

As to claim 1, Tallarida teaches a resection apparatus (col 5, ln 13-24; col 29, ln 20-26), comprising:

- a cutting blade having a body defining a first surface and a second surface, including at least one cutting feature provided on said second surface (col 29, ln 26-32; Fig. 18b);
- a slot defined through at least a portion of a body (col 29, ln 26-32; Fig. 18b);
- a recess defined in at least a portion of said slot (col 29, ln 26-32; Fig. 18b); and
- a shaft having a distal end and a proximal end, wherein a portion of said distal end is received in said recess (col 29, ln 26-32; Fig 20d-e).

Tallarida does not, however, teach a device to bias the shaft against the blade. Sonnabend teaches a resection apparatus (col 1, ln 36-39) comprising a biasing device slidably disposed on a shaft and configured to bias said shaft against a cutting blade (col 1, ln 56-59; col 2, ln 47-52). It would have been obvious to one having ordinary skill in the art to combine the resection apparatus of Tallarida with the biasing apparatus of Sonnabend to achieve a resection apparatus having improved axial orientation because Sonnabend teaches the axial advantages of biasing for axial movement (col 1, ln 56-59; col 2, ln 47-52), and because Tallarida teaches toward axial biasing (col 31, ln 51-53).

As to claims 2 and 3, Sonnabend teaches an apparatus further comprising a hemispherical protrusion extending from said distal end of said shaft, wherein said protrusion is configured to be at least partially received in said recess (col 3, ln 7-12; Fig. 5), and wherein at least a portion of said distal end of said shaft is configured to be received in said slot (col 3, ln 7-12; Fig. 5), respectively.

As to claims 4-7, Tallarida teaches an apparatus further comprising a screw, including a proximal end and a distal end defining a bore therethrough, received on said shaft (col 13, ln 60-64; Fig. 3a, 10b), wherein said shaft is rotatable in said bore (col 13, ln 60-64; col 24, ln 55-59; Fig. 3a, 10b), and wherein said screw includes a nut on said proximal end (col 13, ln 60-64; Fig. 3a, 10b), and wherein said screw includes a plurality of continuous threads in a central portion and a tap proximate said distal end (Fig. 3a, 10b) respectively.

As to claim 8, Tallarida teaches an apparatus further comprising a first sleeve slidably positioned on said shaft (col 23, ln 65-67; col 24, ln 1-2). Tallarida further suggests a spring slidably positioned on said shaft between said first sleeve and said biasing member (col 31, ln 51-53).

As to claim 9, Tallarida further teaches an apparatus wherein said shaft includes a stem and said biasing member includes a ring including an interior surface having a channel defined therein for receiving said stem (col 25, ln 1-7; 19d-e).

As to claim 10, Sonnabend further teaches an apparatus wherein a channel includes a first portion extending along the axis of said shaft and a second portion extending in a direction at an angle from the axis of said shaft (col 3, ln 7-12; Fig. 5).

As to claim 11, Tallarida further teaches an apparatus wherein said ring comprises a first sleeve extending from said ring (Fig. 19d-e). It would further have been obvious to one having ordinary skill in the art to arrange the apparatus further to comprise a spring supported by said first sleeve and a second sleeve positioned between said spring and said cutting blade and upon biasing said ring, said spring is compressed and a force is transmitted to said cutting blade because Tallarida further suggests a spring slidably positioned on said shaft between said first sleeve and said biasing member (col 31, ln 51-53).

As to claim 12, Tallarida further teaches an apparatus wherein said shaft includes a recess defined therein and said biasing member includes a collar positioned on a portion of said shaft (19d-e). Sonnabend further teaches a ridge for being received in a recess defined in a shaft (col 1, ln 56-59; col 2, ln 47-52).

As to claim 13, Tallarida further teaches an apparatus wherein said collar includes a base and flexible legs extending from said base and said ridge is positioned on at least one of said legs and wherein said ridge in a first position is received in said recess defined in said shaft and upon flexing said flexible legs said ridge is configured to be removed from said recess (col 24, ln 47-50; Fig. 19d-e).

\*\*\*\*\*Continued in Supplemental Box\*\*\*\*\*

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
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**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of:  
Box V(2): Citations and Explanations

As to claim 14, Tallarida teaches an apparatus further comprising a tether, wherein said tether is affixed to a detached implant (col 24, ln 13-21; Fig. 15c-d). While Tallarida does not teach an implant being a cutting blade, it would have been obvious to one having ordinary skill in the art to attach a cutting blade to the tether because Sonnabend suggests a detached cutting blade (col 2, ln 58-66).

As to claim 15, Tallarida further teaches an apparatus wherein said cutting blade is non-rotatable with respect to said shaft when said distal end is received in said recess (col 3, ln 7-12; Fig. 5).

As to claim 16, Sonnabend further teaches an apparatus wherein said cutting blade is tiltable at an angle defined by the axis of said shaft and a surface of said cutting blade (col 2, ln 47-52).

As to claim 18, Sonnabend further teaches an apparatus wherein a cutting blade body defines an edge, said cutting blade body has a first thickness and said body tapers to a second thickness proximate to said edge (Fig. 5).

As to claim 20, Tallarida teaches a retrograde resection apparatus, comprising:

- a cutting blade having a body defining a first surface and a second surface, including a cutting feature extending from said second surface (col 29, ln 26-32; Fig. 5, 18b);
- a slot defined in said cutting blade (col 29, ln 26-32; Fig. 18b);
- a recess defined in at least a portion of said slot (col 29, ln 26-32; Fig. 18b);
- a screw, including a proximal end and a distal end defining a bore therethrough (col 13, ln 60-64; Fig. 3a, 10b);
- a shaft having a distal end and a proximal end, wherein said shaft passes through said bore and said distal end is configured to be received in said recess (col 13, ln 60-64; Fig. 3a, 10b); and
- a tether, a first portion of which is affixed to an implant and a second portion of which passes through said bore (col 24, ln 13-21; Fig. 15c-d).

Sonnabend further teaches a resection apparatus (col 1, ln 36-39) comprising a biasing device slidably disposed on a shaft and configured to bias said shaft against a cutting blade (col 1, ln 56-59; col 2, ln 47-52). While neither Tallarida nor Sonnabend does not teach an implant being a cutting blade, it would have been obvious to one having ordinary skill in the art to attach a cutting blade to the tether because Sonnabend suggests a detached cutting blade (col 2, ln 58-66).

Claim 17 lacks inventive step under PCT Article 33(3) as being obvious over Tallarida in view of Sonnabend, as above, and further in view of US 2005/0075642 A1 to Felt et al. (hereinafter 'Felt').

As to claim 17, while Tallarida and Sonnabend teach resecting devices, neither Tallarida nor Sonnabend teach a thickness of the cutting blade body. Felt teaches a bone resection apparatus (para [0023]) wherein a cutting blade body is less than 1 mm in thickness (para [0025]). It would have been obvious to one having ordinary skill in the art to combine the blades of Tallarida and Sonnabend with the thickness of Felt to achieve a blade having optimal cutting and flexibility characteristics because Felt teaches the propriety of a thin blade for resection (para [0025]).

Claim 19 lacks inventive step under PCT Article 33(3) as being obvious over Tallarida in view of Sonnabend, as above, and further in view of US 2004/0148030 A1 (Ek).

As to claim 19, while both Tallarida and Sonnabend teach cutting features, neither Tallarida nor Sonnabend teach a lip or a slit. Ek teaches a resection apparatus wherein said cutting feature includes a lip extending from said second surface of said body and a slit defined through said body at an angle to the second surface of the cutting device (para [0217]). It would have been obvious to one having ordinary skill in the art to combine the cutting features of Tallarida and Sonnabend with the lip and slit system of Ek to achieve a cutting feature having improved blade locking because Ek teaches the advantages of a locked blade (para [0217]) and because Sonnabend teaches toward a locking system for the blade body (col 1, ln 56-59; col 2, ln 47-52).

Claims 1-20 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.